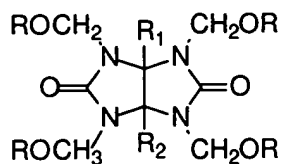


Claims:

What are claimed are:

1. A method of forming a pattern of photoresist which comprises: providing on a substrate an uncured film comprising: a film forming, soluble aliphatic hydroxy functional dendrimer of generation 2 (at least 8 hydroxyl groups) r; a glycoluril derivative; a photoacid generator; an organic solvent; imagewise exposing said film to E-Beam energy in a pattern to thereby cause generation of acid catalyst in said pattern; baking of said exposed film at 90 -130 C for 1-2 minutes; and developing said photoresist in an organic solvent.e solution.
2. A method according to claim 1 wherein the exposure is E-beam energy of less than 1 milli coulombwavelength.
3. The method according to claim 1 wherein said glycoluril derivative has general formula:



Glycoluril derivatives

13. A composition according to claim 13 wherein said photoacid generator is selected from onium salts of group IV elements.

14. A composition according to claim 13 wherein said photoacid generator is selected from onium salts of Group VIa elements.

15. A composition according to claim 13 wherein said phenolic resin or polymer, said glycoluril derivative, said photoacid generator and said solvent form an admixture comprising from about 40% to about 80% of said dendrimer resin or polymer, from about 5% to about 25% of said glycoluril derivative and from about 2.0% to about 20% of said photoacid generator.

16. A method of forming a patterned material structure on a substrate, said material being selected from the group consisting of semiconductors, ceramics, organics and metals, said method comprising:

(A) providing a substrate with a layer of said material,

(B) applying a resist composition to said substrate to form a resist layer over said material layer, said resist composition comprising: an admixture of a aliphatic hydroxyl containing dendrimer with at least 8 hydroxyl groups per molecule; a glycoluril derivative; a photoacid generator; an organic solvent and an organic base;

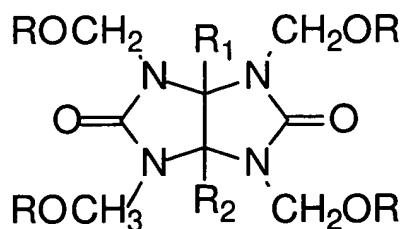
(C) patternwise exposing said substrate to radiation whereby acid is generated by said radiation-sensitive acid generator in exposed regions of said resist layer by said radiation,

(D) contacting said substrate with an aqueous alkaline developer solution, whereby said exposed regions of said resist layer are selectively dissolved by said developer solution to reveal a patterned resist structure, and

(E) transferring resist structure pattern to said material layer, by etching into said material layer through spaces in said resist structure pattern.

8
17.

The method according to claim 16 wherein said glycoluril derivative has general formula:



in which R₁ and R₂ can be selected individually from the group consisting of alkyls having 1-6 carbons, alkenyls, alkoxy.

9
18.

A method according to claim 16 wherein said photoacid generator is selected from onium salts of group IV elements.

10. A method according to claim 7 wherein said photoacid generator is selected from onium ^{salts} of Group VIa elements.

11. A method according to claim 7 wherein said photoacid generator is selected from sulfonate of N-hydroxyimides.

12. A method according to claim 7 wherein the photoacid generator is the ~~hexafluoroantimonate~~ ^{hexafluoroantimonate} of a triaryl sulfonium.

13. A method according to claim 7 wherein said aliphatic hydroxyl containing dendrimer, said glycoluril derivative said photoacid generator and said solvent form an admixture comprising:

from about 90% to about 60% of said dendrimer, from about 5% to about 20% of said glycoluril derivative, and from about 2% to about 20% of said photoacid generator.

in which R₁ and R₂ can be selected individually from the group consisting of alkyls having 1-6 carbons, alkenyls, alkoxy

4. A method according to claim 1 wherein said photoacid generator is selected from onium salts of group IV elements.

5. A method according to claim 1 wherein said photoacid generator is selected from onium salts of Group VIa elements.

6. A method according to claim 1 wherein said photoacid generator is selected from sulfonate of N-hydroxyimides.

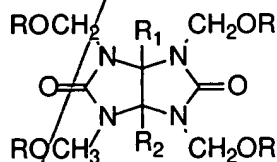
7. A method according to claim 1 wherein the photoacid generator is the hexafluoroantimiate of a triaryl sulfonium.

8. A method according to claim 1 wherein said aliphatic hydroxyl containing dendrimer, said glycoluril derivative said photoacid generator and said solvent form an admixture comprising:

from about 90% to about 60% of said dendrimer, from about 5% to about 20% of said glycoluril derivative, and from about 2% to about 20% of said photoacid generator.

10. A composition of matter comprising: an admixture of a aliphatic hydroxyl containing dendrimer with at least 8 hydroxyl groups per molecule; a glycoluril derivative; a photoacid generator; an organic solvent; an organic base.

12. A composition according to claim 13 wherein said glycoluril derivative has general formula:



YOR920000360US2